

REMARKS

The Examiner has required new drawings. Accordingly, new drawing sheets 1/7 – 7/7 are attached. No new matter is being introduced thereby.

5 Claims 1 and 10 have been objected to. These claims are hereby amended and this ground of objection has been rendered moot.

Claims 1, 5, 6, 10, 11, 13, and 14 have been rejected under 35 U.S.C. 102(b) as anticipated by Sassa (U.S. patent 6,098,077); claims 1-4, 10, and 12 have been rejected under 35 U.S.C. 102(e) as anticipated by Gonzalez et al. (U.S. patent 6,684,289); claim 7
10 has been rejected under 35 U.S.C. 103(a) as obvious over Sassa in view of Peterman (U.S. patent 5,623,654); and claim 8 and 9 have been rejected under 35 U.S.C. 103(a) as obvious over Sassa in view of Lasser (U.S. patent 6,883,114).

In an effort to materially advance prosecution of this application, claim 1 has been amended to include the limitations of claims 6, 8, and 9, and other limitations. Claim 10
15 has been amended to include the limitation of claim 11. Accordingly, claims 6, 8, 9, and 11 have been cancelled. New claims 15-17 have been added,

The First Anticipation Rejection (Sassa)

In the first place, Sassa does not address the smart card controller memory
20 problem that is solved by the present invention. The Sassa focus is flash memory which, within Applicant's knowledge, is installed in memory cards in digital cameras, mobile phones, and the like, which memory cards may be exchanged. A memory stick according to Sassa provides a mass memory to any described digital device. By contrast, the present invention concerns a smart card controller. Claim 1 very expressly calls for a method in a
25 “persistent memory.” Sassa has no reference whatsoever to a persistent memory, only a flash memory.

In accordance with the present invention, as claimed, a smart card controller uses the memory provided on a smart card for internal use only and for the storage of its own data in this memory. Thus, the controller serves for the management of a smart card. For
30 reference purposes, a smart card is a digital data carrier with specific safety devices as a protection against unauthorized access on data stored on the smart card. Also, a smart

card is characterized in that any desired parts of a program (program capable of being operated) are stored on the smart card capable of being operated and use memory space. In the scope of this invention, a problem being solved is to manage this very small memory space as effective as possible.

5 For example, such smart cards may be provided as bank cards, on which cards sensitive account data of an account holder, relevant passwords, relevant keys for having access on the card, and the like, are stored.

10 The problem of a sensible management of memory, that is, that a great quantity of data shall be stored on a very limited memory, cannot at all be perceived from Sassa. It is important for Sassa that a mass memory having a specific memory volume may be read and written.

15 It is true that it is also possible to store a program capable of being operated on such mass memory as described by Sassa. However, it is impossible to have this program capable of being operated under the control of such mass memory because the necessary controller intelligence is missing.

In the case of a smart card in accordance with the present invention, on a relatively small card having the size of a check card and which may be easily carried by the user, those sensitive bank data, relevant keys, and all access authorizations are stored and kept ready for operational purposes.

20 Applicant respectfully disagrees with the Examiner that step b) “selecting the size of blocks...” is shown or suggested by Sassa. From column 6, lines 25-30 of Sassa, it is seen only that there are a plurality of blocks, each block comprising pages and each page having the fixed length or size of 528 bytes, with no variable selectable length of such blocks. By contrast, the blocks in the present claimed invention are selected “such that it 25 is equal to, or equivalent to an integer ratio of, the length of a page in EEPROM to the physical size of the pages of the EEPROM memory existing on the card.” Thus claim 1 calls for the size of the blocks to be selected so that they fit into the physical EEPROM memory, which is not discernable from Sassa.

30 Steps d) and e) of amended claim 1, corresponds to the limitations to original claim 8 and 9. With the method of claim 1 it is possible to provide a minimization of the amount of memory where, at the same time, a safer writing mechanism is used because

commit bits and commit blocks are utilized. Stated another way, claim 1 defines a method for memory management on smart card controllers so that it is possible to provide a safer writing cycle with a minimization of the amount of memory.

The data safety aspects of the invention, as now resulting from the commit bits and commit blocks of claim 1, as amended, are supported in the specification, including but not limited to, page 3, last two paragraphs, to page 4, first two paragraphs, "The Commit Block" (page 9), together with Figure 4 and the corresponding description from line 18 on page 12 to line 9 on page 13. The new limitations in the f) paragraph of claim 1 are from original claim 6, while 1), 2), and 3) are supported from the specification, page 14, lines 23-30, and limitation g) is supported by page 13, lines 1-9.

With reference to Figures 1 and 2 of Sassa, a so-called memory stick is described, including the method of how to store the data of a video camera or of another picture data file in this memory. Page memory 32 is used to store each page of the video data temporarily, which data are supplied by sequencer 31. With the help of decoder 34 an error-correcting code is assigned to the video data which are stored in page memory 32. In this way the video data are read in page-by-page by host computer 10 in flash memories 22a through 22d. In accordance with column 7, line 11 and the following, flash memory 22 is described as a plurality of individual memory blocks which are overwritten with a boot area and provide a data area which consists of several blocks. In addition, a further data area is existing having administrative information of several blocks.

Applicant's invention, as described and claimed, has nothing in any way related to a boot area with a so-called boot block. This is an example of the different focus of Sassa as compared with the present invention.

Additionally, while Sassa discloses organization in the form of a BAT, it does not address the improved safety in writing and management of the blocks with the help of commit blocks as called for in amended claim 1. The memory stick of Sassa does not disclose or suggest a safe memory processing system and, therefore, it is not applicable to a smart card, to which Applicant's invention and claim 1 (as well as other claims) are addressed.

Claims 5 and 6 depend from claim 1 and are believed to be free of the Sassa reference at least for the same reasons as is claim 1.

Claim 10, and subclaims 13 and 14 (the limitations of claim 11 have been incorporated into claim 10), are directed to a device with a persistent memory and a block structure. Claim 10 requires “blocks with the same length and identifying them by their 5 logical block number (LBN).” The Examiner refers to Sassa, column 1, lines 35-41, and column 9, lines 10-18, as disclosing this limitation. Applicant has studied the cited passages of Sassa and found no reference to the relative lengths of blocks, nor any reference to persistent memory anywhere in this cited document.

Further, claim 10, as amended, includes the limitation of “a linkage between 10 blocks by writing the LBN of the following block to the header of the leading one.” The Examiner points to Sassa, column 6, line 39, to column 7, line 5, as showing this element. Applicant has carefully read this passage in Sassa and does not find any reference at all to a linkage with the identified function. This portion of Sassa relates to overwriting the “block enabled/disabled information” to indicate that the block cannot be used and talks 15 about a “linkage address” and a “block end flag.” Applicant found no reference to “writing the LBN of the following block to the header of the leading one.”

The Second Anticipation Rejection (Gonzalez)

Claim 1, as amended, incorporates the limitations of originally submitted claim 8 20 and 9. Like Sassa, Gonzalez has nothing which shows or suggests the security aspects of the commit bits and commit blocks. Further, while the Examiner has determined that “Gonzalez teaches a method for memory management in smart card controllers,” Applicant could find no support in this reference for such a conclusion. There do not appear to be any references in Gonzalez to “memory management” or to “smart card.”

25 These differences in the method of claim 1, being neither shown nor suggested by Gonzalez, strongly support a finding of patentability.

Claim 2-4 depend from claim 1 and are believed to be patentable at least for the same reasons as is claim 1.

Claim 10 calls for “blocks with the same length and identifying them by their 30 logical block number (LBN).” Applicant could find no reference to this limitation in Gonzalez. Further, as with Sassa, Applicant could find no reference or suggestion in

Gonzalez of “a linkage between blocks by writing the LBN of the following block to the header of the leading one.” Thus, Applicant believes claim 10, as amended, patentably defines over Gonzalez.

Claim 12 depends from claim 10 and is believed to be patentable for at least the
5 same reasons as is claim 10.

The First Obviousness Rejection (Sassa and Peterman)

Claim 7 depends from claim 1. Peterman fails to supply the teachings missing from Sassa in relation to claim 1. Thus, claim 7 is believed to be patentable for at least
10 the same reasons as is claim 1.

The Second Obviousness Rejection (Sassa and Lasser)

These claims (8 and 9) have been cancelled, so this rejection is moot.

15 New Claims 15-17

New claim 15 is patterned after claim 1 but does not include the steps of replacing individual memory blocks and the last paragraph relating to commit bits and commit blocks. However, the arguments with respect to Sassa and Gonzalez apply here with respect to persistent memory, selecting the size of blocks, and the safety or security
20 aspects of the commit blocks and commit bits.

New claim 16 depends from claim 15 and adds that the commit bits are managed on a physical level. This is supported by page 3, lines 26-30, page 9, lines 1-28, page 12, lines 18-32, and references throughout to “physical block number” (PBN).

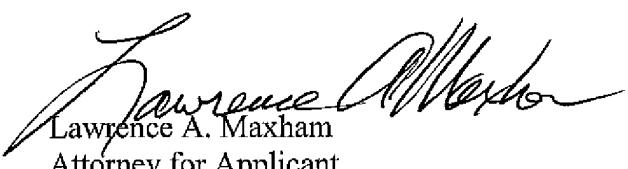
New claim 17 depends from claim 1 and is patterned after claim 16. This claim is
25 believed to be patentable at least for the same reasons as is claim 1.

CONCLUSION

In view of the above claim amendments and arguments, it is believed that all the claims now pending in this application are in condition for allowance, and
5 reconsideration is requested. Should any issues remain unresolved, Examiner Patel is invited to telephone the undersigned attorney.

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